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ABSTRACT

The use of ability variables for grouping students is pervasive in elementary schools. Teachers form these groups judgmentally, taking into account formal (e.g., test) and informal (e.g., personal observation) sources of information. Their judgments of students' abilities are reasonably accurate. Such grouping can be explained as functional on psychological grounds and can, in part, be justified pedagogically. Groups, and not individuals within them, serve as the basis for instructional planning. Teachers' plans exert an enormous influence on what happens during classroom instruction. There are, however, serious limitations attributable to grouping students on status variables: (1) Groups may serve as anchors to student progress; (2) Groups mask large individual differences among students within each group; and (3) Groups lead to prescriptions for instructional treatments and may severely limit the range of alternative groupings and treatments tried in the classroom. What is needed is further research on the link between grouping decisions based on status variables and the educational treatments received by students. Perhaps some of the complexity of deciding on appropriate groupings and treatments can be reduced by new computer hardware and courseware technology. (JD)

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ONE PSYCHOLOGIST'S (NOT VERY REPRESENTATIVE) VIEW OF TEACHERS' DECISIONS ABOUT GROUPING STUDENTS

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(Paper presented at the Annual Meeting of the American Educational Research Association, New York, March, 1982. Symposium: The Status of Status in Research on Teaching.)

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Introduction

To be perfectly honest, I have never considered "status" in my research on teaching. And if my colleagues have written about status in their research on teaching, either I have not read those particular papers or status was not the most memorable part of the work, at least for me.

Since I wasn't sure what was meant by "status" in the context of research on teaching, I immediately went to two dictionaries--Webster's and English & English, the latter for psychological terminology. Webster said status is: "the condition of a person or thing in the eyes of the law... position or rank in relation to others... relative rank in a hierarchy of prestige." English & English said roughly the same if less clearly: status is "a state or condition of affairs, or of a person... an abnormal state... the position accorded, formally or informally, to a person in his own group." So far, the domain was still wide open. I had license to talk just about anything.

The next ploy of the psychologist, at least this one, when dealing with a novel problem--at least novel in the particular terms of this symposium--is to FREE ASSOCIATE. So I did...but I won't tell

you everything that came to mind! The few things printable included "individual difference variables," "socioeconomic status," "gender," "disadvantaged," and "handicapped."

Some of the pieces of the puzzle were beginning to fall into place. But the realm of possible discourse was still considerable. I decided that the safest ground would be to talk about something I knew a little about--and hopefully few others did--so I could get out of here in one piece. So, I plan to discuss teachers grouping decisions, recognizing that teachers group students on what might be called "status variables"--but certainly teachers wouldn't use such a term.

Teachers' Grouping Decisions

Teachers group students for many reasons. Some of the more important reasons are: (a) to reduce heterogeneity among students for instructional purposes, (b) to minimize behavior problems, and (c) to achieve social-interaction goals. When they do so, the groups are formed on the basis of what some, I suppose, would call a "status" variable.

This brief paper focuses on the first reason--that of reducing variability. I will argue that: (a) teachers often group students on the basis of ability; (b) teachers are reasonably accurate in their judgments of students' general abilities; (c) teachers, of necessity, simplify and make teaching manageable by grouping students; (d) teachers plan instruction for the group, not for individuals within the group; (e) teachers' classroom behavior

is profoundly affected by their plans; and (f) teachers' use of grouping can lead to errors in decisionmaking. I conclude, perhaps predictably, that we need considerably more research on the link between grouping decisions based on status variables and the educational treatments received by groups of students.

(a) Ability Grouping. Most elementary teachers group students for reading on the basis of ability. The use of ability grouping for mathematics is less prevalent, but nevertheless practiced. In either case, the groups are usually based on teachers' judgments of ability in general, and in reading or math, depending on the subject being taught. Sometimes this grouping is based primarily on test information, depending usually on the particular curricula.

(b) Accuracy of Judgments. Teachers are reasonably accurate in judging students' abilities in general, and in reading or math. For example, if teachers' ranking of students are correlated with scores on general achievement, reading, and math tests, the correlations on average are about 0.70 but with considerable variation from teacher to teacher (ranging as high as 0.95 to as low as 0.30). In order to determine whether this is a "good" correlation, consider the following: (i) scores on two different tests of academic ability usually correlate 0.60 to 0.70, (ii) test scores and teachers' judgments both contain measurement error which probably makes the true correlation higher than 0.70, (iii) teachers define academic ability somewhat differently than do achievement tests. In other words, on average, teachers are quite accurate in their judgments of ability. (Incidentally, teachers are considerably less accurate in judging student performance on specific tasks or in specific situations.)

(c) Psychological and Pedagogical Rationale for Grouping. By grouping students, the complexity of teaching is considerably reduced. This seems self evident; teaching can be adjusted more easily to homogeneous groups of students than to heterogeneous groups.

However, this assertion has deeper roots, both from a psychological perspective and from a pedagogical one. The psychological perspective is this. The capacity of the human mind for handling the mass of information that confronts us daily, or for formulating and solving complex problems (like teaching) is very small compared to the enormity of the information or problem. This information processing limitation, for example, is evidenced by the fact that people tend to process information sequently--step by step--rather than simultaneously; they can retain only limited amounts of information unless they take sufficient time to rehearse or otherwise help themselves remember it. Information processing limitations can be partially overcome in a variety of ways. To the extent that the complexity can be rendered predictable--consistent, stable--information can be chunked into more abstract units and hence the amount of information handled can be increased. And people selectively perceive and interpret their environment based on their goals. In other words, we reduce complexity by constructing a simplified model of our environment and then make judgments and decisions, and carry them out on the basis of our psychological model.

Grouping students, then, is one psychological strategy by which teachers reduce the complexity of teaching. Groups serve as abstractions of the characteristics of the students in the group. And they make the classroom environment predictable.

Pedagogically, grouping allows teachers to adjust the content and methods of instruction to the characteristics of the students in the group. In this way, teachers are able to adapt instruction more closely to individual needs than attempting to find some compromise for 30 students altogether. By making the classroom environment more predictable the teacher can monitor the behavior of other groups in the classroom. If student behavior differs from what is predicted, the teacher can intervene while still concentrating on the students in the target group.

(d) The Unit of Instructional Planning: The Group. Groups, and not the whole class or the individual student, serve as the basis for teachers' planning. For example, in elementary reading instruction, teachers plan differently for the high- and low-ability groups. Different textbooks are chosen; different formats and instructions are used and the importance of each differs; different interpretations are given to errors in reading; different amounts of time are spent by the teacher reading in the two groups; and differential importance is attached to motivation in the two groups.

(e) Effect of Plans on Classroom Instruction. Teachers' plans exert a profound influence on classroom teaching. Plans act as a script, or routine, or mental image for guiding classroom instruction. Teachers report following this image as they teach, hitting content topics, asking questions, checking for participation along the way. They tend to follow these plans unless the lesson is not going as planned. If behavior problems arise or students' attention wanders, teachers have to decide whether or not to "fine tune" their plans in order to reach their goals.

Teachers' plans exert such a strong influence on their classroom teaching that their behavior becomes quite predictable once the plan is known. It is possible to predict, for example, differences in pacing of high and low reading ability groups and the achievement outcomes of these groups.

(f) Limitations of Grouping. While grouping students on a "status" variable may be psychologically reasonable and, in part, pedagogically sound, this practice has limitations. One limitation is that initial groupings of students may serve as anchors in teachers' judgments of students' subsequent performance. (In the literature on human judgment and decisionmaking, this phenomenon is known as the anchoring heuristic.) For example, while a student's current performance in solving problems in fractions may be equal to that of students in a higher ability group, he may not be moved to the higher group because the teacher's judgment of his prior performance--reflected in his current group status--serves as an anchor in revising the grouping. The anchoring heuristic may partially account for the finding that once students are placed in reading groups, these groupings seldom change during the school year.

The second limitation of grouping on "status" variables is that these variables typically account for a single dimension of ability, albeit a relevant dimension for the purpose of grouping and one correlated with other dimensions of human abilities. However, while teacher planning treats all students as homogeneous within a group, clearly students differ on the grouping variable and on other variables. To some extent, the teacher adjusts to these individual

differences extemporaneously when responding to individual students within the group. Nevertheless, the same grouping for teaching a wide variety of concepts and skills within a single subject-matter may not necessarily capitalize on students' specific abilities. Indeed, this problem is exacerbated when "status" variables like SES or ethnic groups are used since they are nothing more than unidimensional "dummy variables" masking multidimensional differences between individuals.

The third, and perhaps most telling limitation, is that once groups have been formed, they serve as prescriptions for instructional treatments. One example was described above, viz., the differences in instructional treatments for high- and low-ability reading groups. In a collaborative study with an elementary teacher, we decided to change the instructional treatment for students in the low-ability reading group by changing the text book from one below grade level to one at grade level (which differed also in appearance--more academic looking), focused more on student reading than teacher reading in the group, stressed more the content of assignments than following the proper assignment format, and so on. Within three weeks, the students were willingly struggling with the tougher reader and accomplishing the task. And they were spending free time working on reading in the text in contrast to their previous disinterest and lack of motivation toward reading.

A final example should bring this last point home. Teachers usually form homogeneous ability groups. My colleague, Noreen Webb, has found in a series of studies that the nature of ability

grouping in math problem-solving groups radically affects what happens in the group and student performance on individually administered math tests. In homogeneous groups of high, middle and low ability, the highs work independently in solving problems; the middles work together, each member contributing to problem solution; and the lows begin and remain confused. On achievement tests, the middle and high ability students perform about equally well; the lows do poorly. In mixed ability groups, the highs tend to instruct the lows and ignore the middle ability students. On achievement tests, the lows perform better than the middles; the highs do far better than their counterparts in homogeneous groups. Hence, simple grouping on ability ignores other variables that may contribute to student learning, and also may not lead to experimenting with alternative instructional treatments.

Conclusions

The use of ability (status?) variables for grouping students is pervasive in elementary schools, especially in reading instruction. Teachers form these groups judgmentally, taking into account formal (e.g., test) and informal (e.g., personal observation) sources of information. Their ability judgments are reasonably accurate. Such grouping can be explained as functional on psychological grounds and can, in part, be justified pedagogically. Groups, and not individuals within them, serve as the basis for instructional planning. Teachers' plans exert an enormous influence on what happens during classroom instruction. There are, however, three serious limitations

attributable to grouping students on status variables: (1) groups may serve as anchors to student progress, (2) groups mask large individual differences among students within each group, and (3) groups lead to prescriptions for instructional treatments and thus may severely limit the range of alternative groupings and treatments tried in the classroom.

What is needed is further research on the link between grouping decisions based on status variables and the educational treatments received by students. Perhaps some of the complexity of deciding on appropriate groupings and treatments can be reduced by new computer hardware and courseware technology--that is the challenge of the future.